

Session 1
 Keynote Address/Internal Dosimetry
 Chair: W. Burnett, Florida State University
 Colonial Room

| Day/Time | Author/Co-Authors Affiliation | Title of Abstract |
|--------------------|---|---|
| Tuesday | | |
| 8:00-8:10 | Heyward Coleman Environmental Physics, Inc. | Welcome to the 43rd Conference on Bioassay, Analytical, and Environmental Radiochemistry |
| 8:10-8:20 | Joseph P. Riley Mayor of Charleston | Welcome to Charleston, SC |
| 8:20-9:00 | Keynote Address: Prof. Ron Kathren Washington State University | Human Tissue Studies: The Ultimate Bioassay? |
| 9:00-9:20 | <u>Judith Foulke</u> and Daniel J. Strom DOE and Pacific Northwest National Laboratory | DOE's Proposed Standard for Internal Dosimetry |
| 9:20-9:40 | Son N. Nguyen Lawrence Livermore National Laboratory | The T.R.I.P. (Thyroid Radioiodine Intercomparison Program) Odyssey |
| 9:40-10:00 | R.E. Filipy, <u>D.B. Stuit</u> , S.E. Glover, S.P. Grytdal, R.H. Filby, R.L. Kathren, V.F. Khokhryakov, K.G. Suslova, E.E. Aladova, I.A. Orlova, and V.I. Chernikov U.S. Transuranium and Uranium Registry Dosimetry Registry of the Mayak Industrial Association | Radiochemical Comparison between the Dosimetry Registry of the Mayak Industrial Association (DRMIA) and the U.S. Transuranium and Uranium Registries (USTUR) |
| 10:00-10:20 | Coffee Break Vendor Display Area | |
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Session 2
 Environmental Assessment
 Chair: Larry Robinson, Florida A&M University
 Colonial Room

| Day/Time | Author/Co-Authors Affiliation | Title of Abstract |
|--------------------|--|---|
| Tuesday | | |
| 10:20-10:40 | <u>Evgeny Kontar</u> and Bill Burnett P.P. Shirshov Institute of Oceanology (Moscow) and Florida State University | Fate of Chernobyl Radionuclides in Black Sea Sediments |
| 10:40-11:00 | <u>Carl T. Bishop</u> , J.R. Wise, J.M. Byrne, and P.A. Tetsuwari Fluor Daniel Fernald | Uranium in Airborne Particulates at Fernald Using "Dynaweb" Filters |
| 11:00-11:20 | <u>Greg Smith</u> , Mike Schultz, Bill Burnett, and Ken.G.W. Inn Florida State University and NIST | Optimization of a Sequential Extraction Method for Soils and Sediments: Development of the NIST Standard Sequential Extraction Protocol |
| 11:20-11:40 | G. Timothy Jannik Westinghouse Savannah River Company | Critical Radionuclide/Critical Pathway Analysis for the Savannah River Site |
| 11:40-12:00 | <u>Jon P. Martin</u> , K.J. Odell Magnox Electric Plc (UK) | Emergency Radiochemical Analysis Methodology and Performance |
| 12:00-1:30 | Conference Luncheon Gold Room Invited Speaker: William Reinig | History of the Savannah River Site |
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Session 3
 Naturally-Occurring Radionuclides
 Chair: John Griggs, Canada Radiation Protection Bureau
 Colonial Room

| Day/Time | Author/Co-Authors Affiliation | Title of Abstract |
|------------------|---|--|
| Tuesday | | |
| 1:30-1:50 | J. Oliveira, <u>Barbara Mazzilli</u> , M.H.O. Sampa, and E. Bambalas Instituto de Pesquisas Energeticas e Nucleares (Brazil) | Determination of Natural Radioactivity in Public Water Supplies of the State of Sao Paulo |
| 1:50-2:10 | <u>Donna M. Beals</u> , Bill Winn, and Miles Denham Savannah River Technology Center | Analysis of the Ra-226/228 Isotope Ratio to Determine the Source of Elevated Radium in the Groundwaters Below an Old Coal Pile |
| 2:10-2:30 | <u>Michael G. Cantaloub</u> , J.F. Higginbotham, and L. Semprini Oregon State University | The Determination of Rn Partition Coefficients for Several Liquid Scintillation Cocktails |
| 2:30-2:50 | <u>Katherine M. Ellis</u> , Richard P.W. Nelson, John N. Smith, and Brad Moran Bedford Institute of Oceanography and University of Rhode Island | Evaluation of the "Challenger" Pump for Radionuclide Oceanographic Sample Collection |
| 2:50-3:10 | <u>T.L. Rucker</u> and C.M. Johnson Science Applications International Corporation | Calculation of Uranium Isotopic Activity Composition Based on Data from Various Assay Methods |
| 3:10-3:30 | Coffee Break Vendor Display Area | |

Session 4
 In-Vivo Analyses/Radiation Protection
 Chair: Barry Stewart, Environmental Physics, Inc.
 Colonial Room

| Day/Time | Author/Co-Authors Affiliation | Title of Abstract |
|------------------|---|---|
| Tuesday | | |
| 3:30-3:50 | Gary H. Kramer Canada Radiation Protection Bureau | Considerations in Assigning Dose Based on Uncertainties from In Vivo Counting |
| 3:50-4:10 | <u>Gary H. Kramer</u> , Barry Hauck, and Steve Allen Canada Radiation Protection Bureau and Cameco Corp. | Comparison of the LLNL and JAERI Torso Phantoms Using Four 70 mm Ge Detectors and Four Phoswich Detectors |
| 4:10-4:30 | <u>Gary H. Kramer</u> , Linda Burns, and Suzanne Yiu Canada Radiation Protection Bureau | Lung Counting: Evaluation of Uncertainties in Lung Burden Estimation Arising from a Heterogeneous Lung Deposition Using Monte Carlo Code Simulations |
| 4:30-4:50 | <u>N. A. Teasley</u> and L.D. Bible Oak Ridge National Laboratory | Twelve Years of Radiation Monitoring of Deer on the Oak Ridge Reservation (1985-Present) |
| 4:50-5:10 | <u>P. A. Scofield</u> and F.R. O'Donnell Oak Ridge National Laboratory | Individual and Collective Effective Dose Equivalents Associated with Consumption of Venison Obtained from Deer Hunts on the Oak Ridge Reservation |
| | Open Evening | |
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Session 5
Radioanalytical Method Development
Chair: Brian Crandall, Westinghouse Savannah River Co.
Colonial Room

| Day/Time | Author/Co-Authors Affiliation | Title of Abstract |
|-------------------|--|--|
| Wednesday | | |
| 8:00-8:20 | <u>D. R. Corbett</u> , Bill Burnett, and W.J. McCabe Florida State University and Geological and Nuclear Sciences, Ltd. (New Zealand) | Simple Technique for the Measurement of I-131 in Water Samples via NaI Detector |
| 8:20-8:40 | <u>Donna M. Beals</u> , Brian S. Crandall, Wanda G. Britt, Peter D. Fledderman, Joseph P. Dugan, and Brad K. Davis Westinghouse Savannah River Co. and Bechtel Savannah River Co. | Surface and Groundwater Analyses Using Solid Phase Extraction Disks |
| 8:40-9:00 | <u>Roger Wong</u> , Bill Burnett, Brian Crandall, and Sue B. Clark Florida State University, WSRC, and Washington State University | Development of an Improved Assay for the Determination of Gross Alpha and Beta Concentrations in Soil by Liquid Scintillation Counting |
| 9:00-9:20 | <u>S. Scarpitta</u> , J. Odin-McCabe, R. Gaschott, and A. Meir Brookhaven National Laboratory | Comparative Results of Four Sr-90 Groundwater Analytical Methods |
| 9:20-9:40 | Hewitt W. Jeter Teledyne Environmental Services | Gross Alpha/Beta Proportional Counting for Samples Having High Residue Mass |
| 9:40-10:00 | Coffee Break Vendor Display Area | |
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Session 6
 Extraction Chromatography/Separation Methods
 Chair: Michael Schultz, NIST and Florida State University
 Colonial Room

| Day/Time | Author/Co-Authors Affiliation | Title of Abstract |
|--------------------|---|---|
| Wednesday | | |
| 10:00-10:20 | <u>M. Rodriguez</u> , J.L. Gascon, and J.A. Suarez CIEMAT (Spain) | Study of the Interferences in the Determination of Pu, Am, and Cm in Radioactive Waste by Extraction Chromatography |
| 10:20-10:40 | <u>Peter H. Cable</u> and Bill Burnett QST Environmental Inc. and Florida State University | Analysis of Promethium-147 In Aqueous Samples |
| 10:40-11:00 | <u>Ray A. Sigg</u> , S.F. Peterson, and D.P. DiPrete Westinghouse Savannah River Company | Promethium Separations using Eichrom Ln Resin |
| 11:00-11:20 | R.A. Dewberry Savannah River Technology Company | Measurement of Ni-63 Content in Savannah River Site DWPF Glass Product by Ni-Selective Ion Exchange Purification and β - Counting |
| 11:20-11:40 | <u>Robert Langston</u> , Debra Madden, and Tracey Simpson Lawrence Livermore National Laboratory | The Determination of Curium in Fecal and Chelated Urine Samples |
| 11:40-1:30 | Lunch On Your Own | |
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Session 7
 Quality Assurance/Data Management/Statistics-1
 Chair: Mo Khalil, Westinghouse Savannah River Co.
 Colonial Room

| Day/Time | Author/Co-Authors Affiliation | Title of Abstract |
|------------------|---|--|
| Wednesday | | |
| 1:30-1:50 | Conference Business Meeting Founder's Award Presentation | |
| 1:50-2:10 | <u>W.E. Streets</u> , P.C. Lindahl, J.J. Marr, K.J. Parish, A.E. Scandora, J.M. Copple, G.A. Anast, and J.R. Dahlgran ANL and RESL | Status of Implementation of DOE's Integrated Performance Evaluation Program (IPEP) |
| 2:10-2:30 | <u>James R. Dahlgran</u> , P.C. Lindahl, W.E. Streets, and W.R. Newberry RESL, ANL, and DOE | IPEP: The U.S. Department of Energy's Integrated Performance Evaluation Program; A Tool in a Total Quality System |
| 2:30-2:50 | <u>Michael K. Schultz</u> , Kenneth G.W. Inn, and J.M.R. Hutchinson National Institute of Standards and Technology | The NIST Radiochemistry Intercomparison Program NRIP: Traceability for Low-Level Radioanalytical Laboratories- Results of Year 1 |
| 2:50-3:10 | <u>Mansour Akbarzadeh</u> , Chuan-Fu Wu, Steven Bakhtiar WIPP Laboratory | Radiochemical Methods and Intercomparison Programs Participation by WIPP Laboratories |
| 3:10-3:30 | Coffee Break Vendor Display Area | |
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Session 8
Quality Assurance/Data Management/Statistics-2
Chair: Donivan Porterfield, LANL
Colonial Room

| Day/Time | Author/Co-Authors Affiliation | Title of Abstract |
|-------------------|--|---|
| Wednesday | | |
| 3:30-3:50 | <u>Howard L. Hall</u> and Christine Choate Lawrence Livermore National Laboratory | WWW-Based Information Distribution in the Analytical Laboratory |
| 3:50-4:10 | P.Berard, F. Briot, D. Cavadore, L. Exmelin, R. Fottorino, <u>F. Nguyen</u> PROCORAD (France) | International Quality Controls in the Field of Radiotoxicological Bioassay |
| 4:10-4:30 | <u>Jon A. Broadway</u> , Donald A. Chambless, and Richard E. Malenfant International Corps on the Environment (ICE) | Assessment of Performance Testing Results in 1997 and Response to Laboratory Questionnaire |
| 4:30-4:50 | Thomas M. Semkow New York State Dept. Health | Is the Average of Detected Counts a Good Measure of the Dispersion of Radioactivity Measurements? |
| 6:00-11:00 | Beach Party Citadel Beach House Sullivan's Island Buses Depart Beginning at 5:30pm | |

Session 9 (Concurrent with Session 10)
 Bioassay/Environmental Analytical Techniques
 Chair: Robin Young, Westinghouse Savannah River Co.
 Calhoun Room

| Day/Time | Author/Co-Authors Affiliation | Title of Abstract |
|-------------------|--|--|
| Thursday | | |
| 8:00-8:20 | <u>J.G. Griggs</u> and MARLAP Workgroup Members EPA, DOE, NRC, DOD, NIST, others | Multiagency Radiation Laboratory Protocols (MARLAP) Manual |
| 8:20-8:40 | <u>C. Mitchell Abbate</u> , John Eisenmenger, Gretchen Baer, and Doug Sawtelle WASTREN-Grand Junction | Simultaneous Determination of Ra- 226 and Ra-228 by Liquid Scintillation Counting |
| 8:40-9:00 | Donivan R. Porterfield Los Alamos National Laboratory | Assessment of Low-Level Plutonium in Urine QC Sample Results by Thermal Ionization Mass Spectrometry (TIMS) |
| 9:00-9:20 | Seth D. Shulman Bioscan, Inc. | A Compact Liquid Scintillation Counter for Benchtop and Field Use |
| 9:20-9:40 | <u>J. W. Collins</u> , S. Dunston, Angel D. Christman, MAJ Maguire, MD, and 1LT K. Guiberson USACHPPM, MHPP, OEMP, RCCCD | The U.S. Army Bioassay Program for Internally Deposited Radionuclides |
| 9:40-10:00 | Coffee Break Drayton Room | |

Session 10 (Concurrent with Session 9)
 Environmental Studies-1
 Chair: Myint Thein, ORNL
 Pinkney Room

| Day/Time | Author/Co-Authors Affiliation | Title of Abstract |
|-------------------|---|---|
| Thursday | | |
| 8:00-8:20 | <u>Barbara M. Gillespie</u> , Gregory W. Patton, and Robert A. Kiddy Pacific Northwest National Laboratory | Iodine-129 in Onsite and Offsite Samples at Hanford |
| 8:20-8:40 | <u>John R. Meriwether</u> , Carey Hardaway, Wei-jenq Sheu, Joseph Sneddon, and James N. Beck University of Southwestern Louisiana, McNeese State University, and Nicholls State University | The Effect of Diagenetic Processes on the Radiochronology of Soft Sediments Using ²¹⁰ Pb and ¹³⁷ Cs |
| 8:40-9:00 | W.H. Carlton, <u>G.T. Jannik</u> , and A.A. Simpkins Westinghouse Savannah River Company | Radiological Impact of 1996 Operations at the Savannah River Site |
| 9:00-9:20 | I.L. Larsen, <u>F. Essien</u> , L.Robinson, and J. Weaver ORNL and Florida A&M Univ. | Radionuclide Distribution in Soils Periodically Treated with Multiple Sewage Sludge |
| 9:20-9:40 | Tim A. DeVol, <u>J.E. Roane</u> , and R.A. Fjeld Clemson University | Measurement of Radionuclides in Reactor Coolant Water by Ion Chromatography and On-Line/Off-Line Scintillation Counting |
| 9:40-10:00 | Coffee Break Drayton Room | |

Session 11 (Concurrent with Session 12)
 New/Improved Radioanalytical Techniques
 Chair: Donna Beals, Westinghouse Savannah River Co.
 Calhoun Room

| Day/Time | Author/Co-Authors Affiliation | Title of Abstract |
|--------------------|---|---|
| Thursday | | |
| 10:00-10:20 | <u>Donivan R. Porterfield</u> , George H. Brooks, Sammy R. Garcia, Yolanda I. Giles, Nancy L. Koski, and Bret L. Lockhart Los Alamos National Laboratory | A New Tool in the Evaluation of Gamma-Ray Spectral Analysis Software |
| 10:20-10:40 | P.N. Koch, <u>L. W. Hatcher</u> , and J.D. Batchelor Bechtel Nevada | Active Shielding Techniques Applied to Gamma Spectroscopy and Their Costs vs. Benefits |
| 10:40-11:00 | <u>Steven A. Kreek</u> , D. Beckedahl, J. Kammeraad, A. Friensehner, J. Blair, B. Payne, and A. Goldberger LLNL and Lockheed Martin | Real-Time Digital Signal Processing for HPGe Detectors |
| 11:00-11:20 | <u>Neil M. Barss</u> , R. Thomas Bell III, David E. McCurdy, Leenu E. Kuruvilla, and Kenneth G.W. Inn DOE, OIHP (EH-63), YAEL, NIST | ²³⁹ Pu Intercomparison of ICP-MS, TIMS and FTA at μ Bq levels |
| 11:20-11:40 | <u>D.P. Diprete</u> , S.F. Peterson, and R.A. Sigg Westinghouse Savannah River Company | Gross Alpha Measurements using Extraction Chromatography in Conjunction with Pulse Shape Analysis on Savannah River Site High Activity Waste Solutions |
| 11:40-12:00 | <u>Zenon Pawlak</u> and Gabriela Kuswik-Rabiega Utah Department of Health | A Comparison of the Inductively Coupled Plasma Mass Spectroscopy /ICP/MS/ and Radiochemical Techniques of Total Uranium in Ground Water and Environmental Water Samples |
| 12:00 | End of Conference | |
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Session 12 (Concurrent with Session 11)
 Environmental Studies-2
 Chair: Gary Kramer, EPA NAREL
 Pinkney Room

| Day/Time | Author/Co-Authors Affiliation | Title of Abstract |
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| Thursday | | |
| 10:00-10:20 | <u>Walter Kubilius</u> , Brian Crandall, Terrence Killeen, and James Westmoreland Westinghouse Savannah River Company and Environmental Physics, Inc. | Causes of Radiological False Positives in Environmental Soil and Groundwater Data From Commercial Laboratories |
| 10:20-10:40 | Stephanie Woolf DOE | From a Chemist to an Environmental Compliance Officer: Waste Management and Additional Environmental Compliance Issues at the U.S. DOE's Radiological and Environmental Sciences Laboratory |
| 10:40-11:00 | Bahman Parsa NJ State Department of Health | Contribution of Short-Lived Radionuclides to Alpha-Particle Radioactivity in Drinking Water and Their Impact on the Safe Drinking Water Act Regulations |
| 11:00-11:20 | <u>R. Garcia</u> , R. Rosson, and B. Kahn Georgia Institute of Technology | Microwave-Assisted Decomposition of Environmental Samples Coupled to Classical methods of Separation and Purification for the Analysis of ⁹⁰ Sr and ^{238,239} Pu |
| 11:20-11:40 | J.H. Aldstadt, <u>K.A. Orlandini</u> , L.L. Smith, K.M. Hoffmann, D.C. Seely, and I.R. Shaw-Epperson ANL, 3M Company, and Advance Possis, Inc. | A System for Rapid Water Sampling and Analysis Based on Empore Membranes and Solid Scintillation Spectrometry |
| 11:40-12:00 | Robert C. Hochel Westinghouse Savannah River | Automated Radiological Scanning of Potentially Contaminated Railroad Crossties for Free-Release or Disposal |
| 12:00 | End of Conference | |